

Appl. No. 10/538,136
Reply to Office Action of November 29, 2007

Amendments to the Drawings:

Attached is a replacement sheet for Fig. 1 wherein Fig. 1 is amended to include the legend "PRIOR ART." This is supported as suggested by the Examiner (see also page 1, lines 12-22 of specification).

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The specification is amended to avoid the objections.

Claims 1-2 and 4-6 are rejected as anticipated by Shioya et al under 35 USC 102. The subject matter of Claim 3 is added to Claim 1 (and also Claim 4), and the range modified to reflect test data in the specification.

Since Claim Rejections based on 35 USC §102 are not directed to Claim 3 (now cancelled), the amendment avoids the Claims 1 and 4 anticipation rejection.

There is also an obviousness rejection over Shioya combined with Shaheen.

The upper limit of 20% for the metal powder having a melting point of 300°C or less is reduced to 17.6% to coincide with the test data in the specification showing unexpectedly good results.

(See Table 3 where most examples are approximately 17.6 and Examples in Table 4 including Example 1f (5%)).

Concerning the limitation of Claims 3 and 7 (now in the main claims) the Examiner relies on Shaheen for overlapping the lower point with the upper point of the range of amount of low melting metal required in the claims. However, Shaheen shows a higher

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range (20-80%) than now claimed, and provides no reason to conclude that lowering the range would be expected to produce special results. One is taught away from using a lower range by the teaching of 20-80%.

More specifically, Shaheen teaches the weight percent of the gallium-tin eutectic being 20-80% and the weight percent of the gold being 80-20% (column 1, lines 49-52). The claims now clearly distinguish the present invention from Shaheen. It would not have been obvious to use the range of 5% up 17.6%, nor would one expect, from Shaheen to obtain an "improved" conductive paste as shown by the data in the specification, by using an amount below the Shaheen disclosed range of 20 to 80%.

Concerning the claimed structure, according to the present invention, an external electrode(s) is formed from a conductive paste comprising a defined mixture of conductive particles having a high melting point and metal powders having a "low" melting point of 300°C or less. On the other hand, an external electrode is formed from a conductive paste comprising particles having a high melting point which are coated with a metal having a low melting point in working examples of Shioya.

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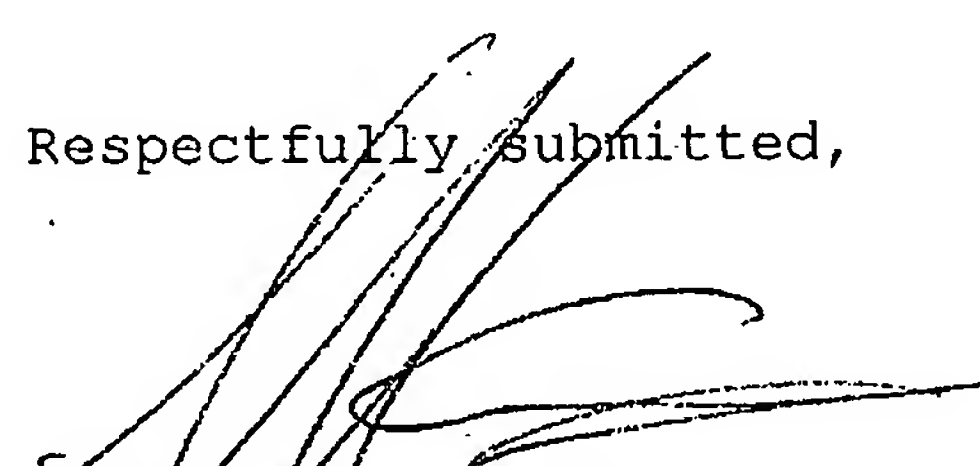
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Due to the difference on the conductive pastes, it is submitted that the structure of an electrode according to the present invention is different from the structure of an electrode according to (machine translation of) Shioya, alone or as modified by Shaheen. Nor are the improved results expected when using material outside the range suggested by the combination teaching. Therefore, the present invention is not shown as obvious from the combined art.

In view of the above, the rejections are avoided. Allowance of the application is therefore respectfully requested.

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Respectfully submitted,


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Encs.: Replacement Sheet drawing Fig. 1